

## Part 4

Read the article and answer the questions. Write a maximum of five words for each answer. An example is done for you.

### Penguins in Danger

Raising a baby takes a lot of work, especially when that baby is a king penguin. Now, it looks like climate change will make life even harder for these birds. A new study suggests that warmer waters could shrink their numbers.

Most king penguins live on the Crozet Archipelago, a group of islands in the Indian Ocean, about 1,000 miles north of Antarctica. After the penguin chicks are born in November (which is summer in the Southern Hemisphere), both parents spend 4 months collecting fish, some of which they regurgitate to feed their offspring.

When the fish move to deeper waters in March, the adults leave their chicks alone for months. They swim hundreds of miles south. There, near the Antarctic ice, they spend the winter eating squid, fish and other sea creatures, to replenish their own energy stores. In October, nearly a year after their chicks were born, the parents return to feed and finish raising them.

Scientists from the French National Centre for Scientific Research (CNRS) in Strasbourg, France, have been studying king penguins on the Crozet Archipelago for a decade. Starting in 1998, Yvon Le Maho and colleagues implanted electronic ID tags under the skin of hundreds of penguins.

These are the same types of tags you might put in your dog or cat, so you can track them if they get lost. The tags have allowed Le Maho's team to identify individual birds and keep track of details about them, such as how long they live, whether they return from their winter trips, and if their chicks manage to survive the winter. It is important for the scientists to do this because they need to know these things about the penguins, so if it seems they are in trouble, they can take steps to help them and ensure their survival.

To see whether water temperatures affect the penguins, Le Maho compared his data with temperature records. Ocean surface temperatures vary from year to year. And previous research had shown that fewer squid, fish and other creatures are present when the water is warmer. Le Maho suspected that this drop in the food supply would make it harder for adult penguins to survive the tough times ahead. Indeed, his results showed that fewer adults survived during winters when the water was especially warm. Just a quarter of a degree (0.26°C to be exact) warming of seawater reduces adult penguins' survival rates by 9 percent in later years.

King penguins can live for up to 30 years. And for now, the population still appears healthy. But a warming trend could spell big trouble for a bird that depends on cold and ice.

**Example:** What will soon make life more difficult for king penguins?  
*climate change*

1. Why are penguins born in November, and not in May?

2. What do king penguins do after their babies are born?

3. What do parent penguins do in March, when they leave their chicks?

4. In what month do parent penguins return to their young?

5. Where on the penguins did scientists put electronic ID tags?

6. What does sometimes cause the levels of penguins' food supplies to drop?

7. How old do king penguins live to be?

Total: 7 marks  
Total marks for Reading: 26